

Town of Needham DPW Central Ave Storage Facility

Update Presentation



February 14, 2018

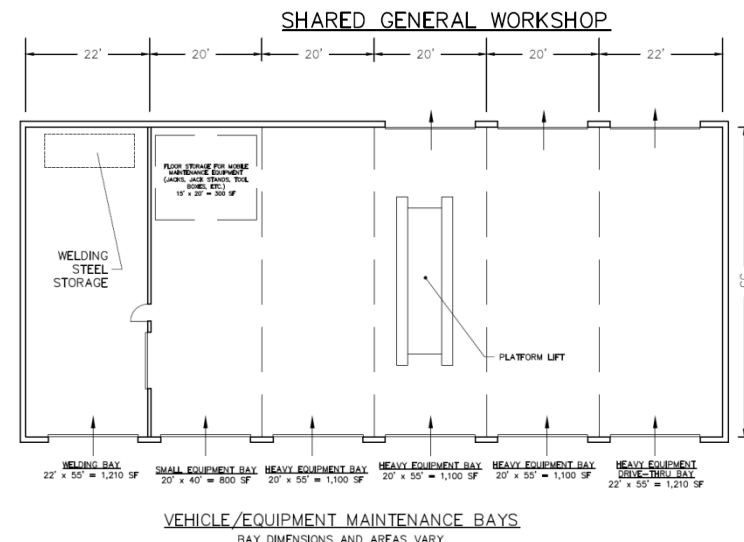
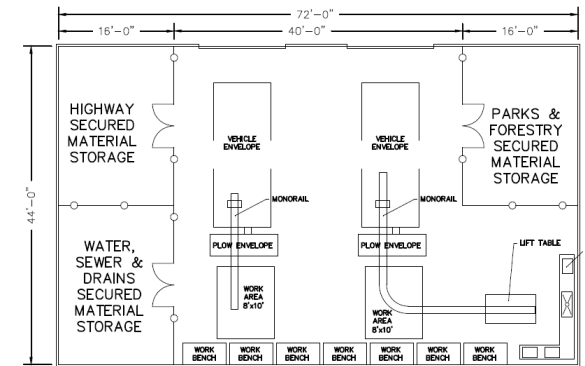
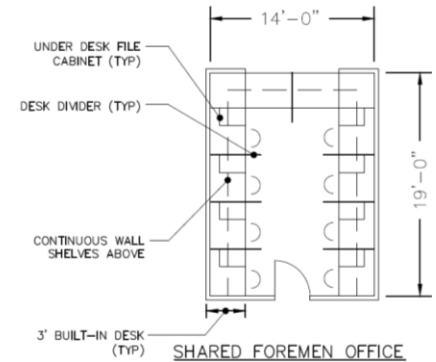
Town of Needham
Public Works Facility

Background
2016 Public Works Facility
Feasibility Study Results

Town of Needham DPW Central Ave Storage Facility

Programming Process

- Conducted staff interviews to verify program requirements
 - Administration
 - Engineering
 - Highway
 - Water, Sewer, & Drains
 - Parks & Forestry
 - Recycling & Transfer Station
- Assembled a comprehensive list of DPW vehicles and equipment
- Developed a space needs program



Town of Needham
DPW Central Ave Storage Facility

Programming Results

<u>Space Needs Assessment</u>	<u>2014 Master Plan Space Needs</u>	<u>2016 Comprehensive Feasibility Study Program</u>
• Administration / Engineering	13,793 SF	11,324 SF
• Staff Support	6,103 SF	5,901 SF
• Workshops	5,746 SF	4,922 SF
• Equipment Maintenance	14,818 SF	11,926 SF
• Wash Bay	1,776 SF	1,549 SF
• Vehicle & Equipment Storage	46,244 SF	51,744 SF
Subtotal:	88,480 SF	87,366 SF
• Open Canopy Storage	--	<u>11,880 SF</u>

**Space needs have been
independently verified**

Town of Needham DPW Central Ave Storage Facility

Vehicle & Equipment Program Verification

- Reviewed comprehensive vehicle list
 - 75 Vehicles (pickups, utility, dump trucks, construction equipment)

Sample From Vehicle List

HIGHWAY									
ID#	DEPT	YR	MAKE/MODEL	DESCRIPTION	PHOTO	WIDTH	LENGTH	LIC#	ID#
6	Hwy	2015	Intl 7300	Dump Truck	X	8'	24'	M62736	6
7	Hwy	2000	Intl 4900	Dump Truck	X	8'	24'	M62735	7
8	Hwy	2014	Intl 7400	Dump Truck	X	8'	24'	M89941	8
9	Hwy	2012	Intl 7400	Dump Truck	X	8'	24'	M87157	9
10	Hwy	2010	Intl 7400	Dump Truck	X	8'	24'	M82953	10
32	Hwy	2012	Ford F350	Pick Up	X	8'	18'	M88340	32
39	Hwy	2012	Ford F550	Dump Truck	X	8'	21'	M77250	39
43	Hwy	2012	Ford F350	Pick Up	X	8'	18'	M86759	43
47	Hwy	2007	Intl 7400	Dump Truck	X	8'	22'	M76117	47
48	Hwy	2008	Ford F450	Utility Truck	X	8'	21'	M88898	48
49	Hwy	2002	Volve Truck	Tractor	X	8'	30'	M6411	49
52	Hwy	2009	Ford Escape Hybrid	SUV		7'	15'	M78365	52
55	Hwy	2011	Ford F550	Dump Truck	X	8'	19'	M77245	55
57	Hwy	2012	Ford F350	Pick Up		8'	18'	M88339	57

Town of Needham

DPW Central Ave Storage Facility

Vehicle & Equipment Program Verification

- Developed a comprehensive equipment list with the assistance of the Town
 - 95 Pieces of Equipment (tractors, towed equip, attachments, trailers, etc.)
- Classified storage type (garaged vs. covered)

Sample From Equipment List

UNI	YEAR	TYPE	MAKE	MODEL	REG	DIV	Seasonal	Garage vs. Covered
113	2008	Sidewalk Tra	Camoplast	SW4S	M57947	H	Seasonal	Garaged
116	2014	Sidewalk Tra	Prinoth	SW4S	M55339	H	Seasonal	Garaged
117	2015	Sidewalk Tra	Prinoth	SW4S	M95737	H	Seasonal	Garaged
131	2000	Roller	Dynapac	CC122	0	H	Seasonal	Garaged
134	2006	Roller	Wacker	RD11A	0	H	Seasonal	Garaged
150A	1981	Welder	Hobart	Mega-Arc	0	W	Seasonal	Garaged
156	2011	10" Pump/Trailer	Baker/Robinson	1340	M88791	W	Seasonal	Garaged
157	2012	6" Pump/Trailer	PP&P	E6	M87496	W	Seasonal	Garaged
158	0	8" Pump			0	W	Seasonal	Garaged

Town of Needham DPW Central Ave Storage Facility

Vehicle & Equipment Program Verification



Town of Needham
DPW Central Ave Storage Facility

Vehicle & Equipment Program Verification

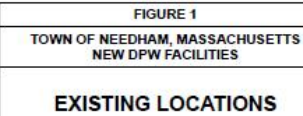


Town of Needham DPW Central Ave Storage Facility

Vehicle & Equipment Program Verification



DPW Operation Areas



Town of Needham
Public Works Facility

Public Works Facility
Master Plan

EXISTING
SALT SHED

Existing Public Works
Facility

Existing Public Services
Administration Building
(PSAB)

NEEDHAM RESERVOIR

Edge of Reservoir

Edge of Dike berm

EXIST. OPEN GARAGE

Existing 2-Story
Space

Existing Garage

EXISTING
NEEDHAM
PUBLIC SERVICES
ADMIN BLDG

DEDHAM AVE

Existing Covered / Open,
48" culvert.

NEEDHAM DPW
499 DEDHAM AVE · EXIST. DPW SITE

1" = 60'-0"



EXISTING
SALT SHED

LIVINGSTON AVE

SOUTH ST

NEEDHAM RESERVOIR

Edge of Reservoir
Edge of Dike berm

Development
Area for New
Public Works
Facility

EXIST. open storage
2-Story
Space
Existing Garage

EXISTING
NEEDHAM SERVICES
ADMIN BLDG

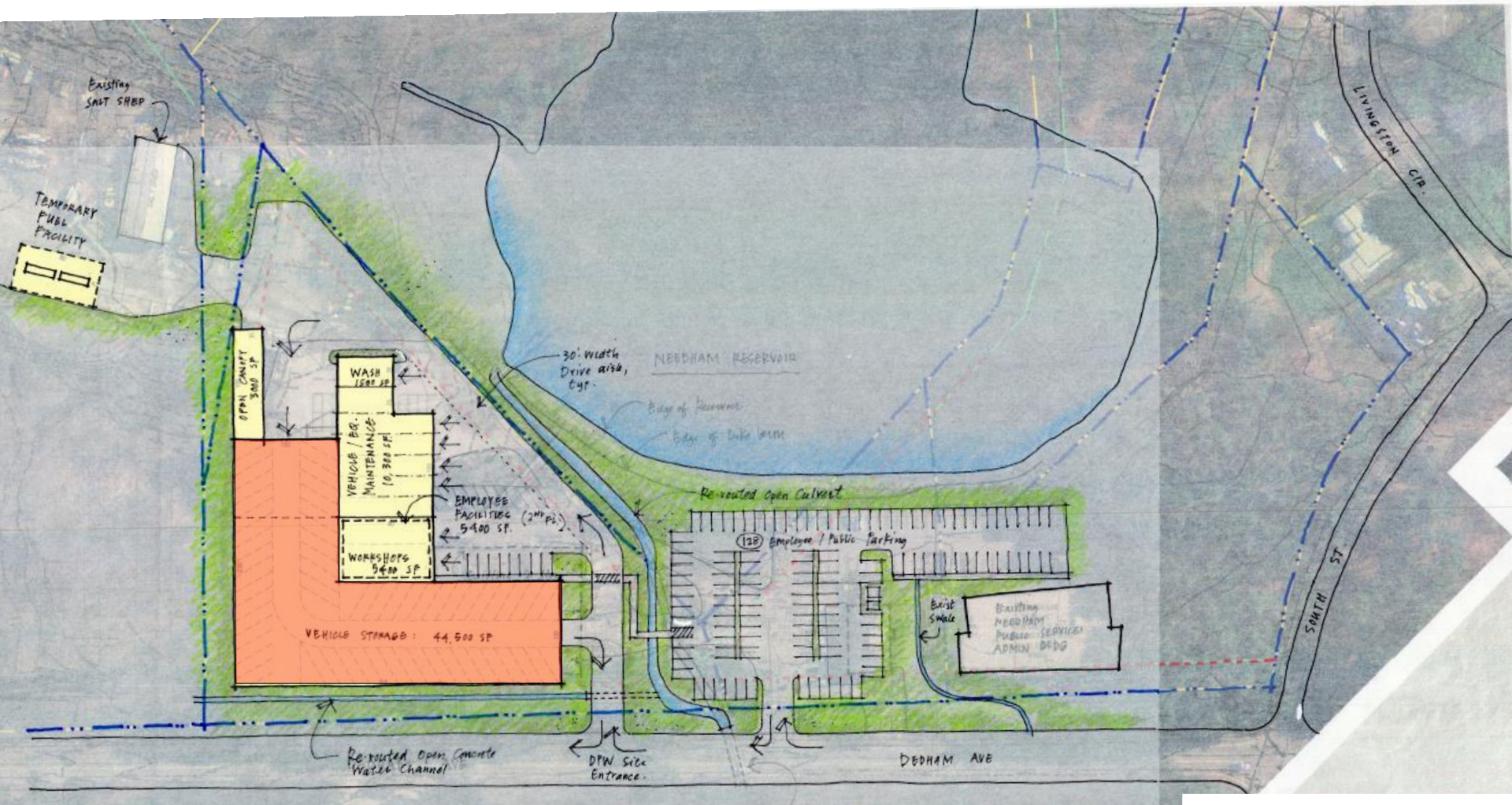
DEDHAM AVE

Existing Covered / Open,
48" culvert.

NEEDHAM DPW
499 DEDHAM AVE · EXIST. DPW SITE

1" = 60'-0"





NEEDHAM DPW
 499 DEDHAM AVE · EXIST. DPW SITE
 OPTION 2 - REV 3 : 'L' SCHEME
 2ND FLOOR EMPLOYEE FACILITIES

Existing Covered / Open,
48" Culvert.

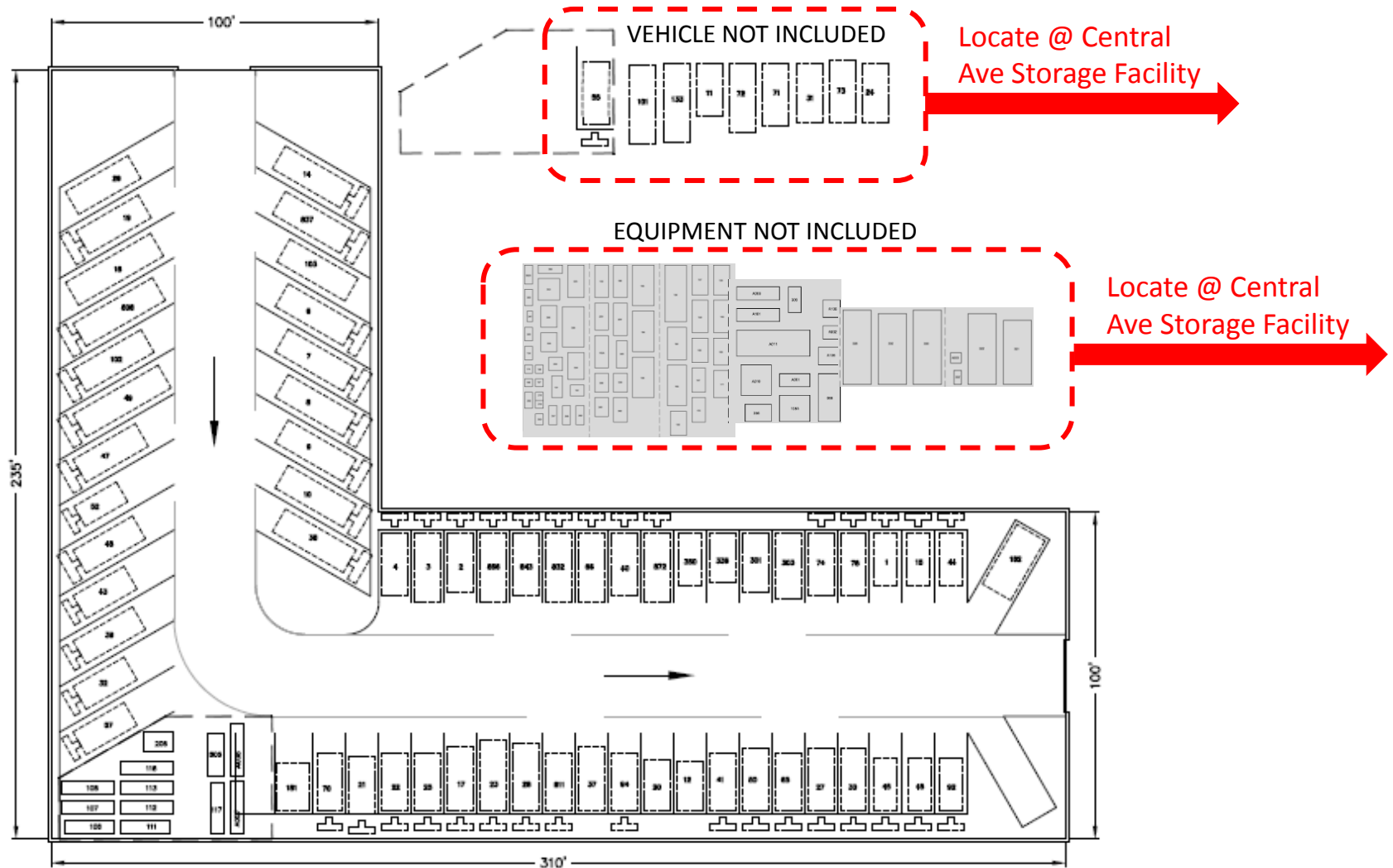
1" = 60'-0"



Town of Needham DPW Central Ave Storage Facility

Vehicle & Equipment Storage Concept Development

DEDHAM AVE STORAGE FACILITY



Town of Needham
DPW Central Ave Storage Facility

Central Avenue Storage Facility
Programming Analysis

Town of Needham DPW Central Ave Storage Facility

Vehicle & Equipment Program Verification

- Develop equipment storage scenarios based on the season

Winter Season:				
Central Avenue			Dedham Avenue	
Garage	Canopy		Garage	Canopy
Year Round	Summer Equipment	Summer Equipment	Winter Equipment	Winter Equipment
150A	131	68	106	006A
156	134	91	107	007A
157	183	93	108	009A
158	184	108A	111	010A
159	186	309	112	47
160	202	321	113	207
161	233	322	116	208
163	250	328	117	807A
164	251	330	206	
165	253	332	806	
167	257	337	A007	
168	258	356	A008	
169	262	893	A116	
170	263	A001		
171	306	A002		
174	323	A003		
190	325	A009		
193	333	A010		
169	334	A011		
167	335	A101		
198	336	A105		
216	338	A106		
218	339			
	340			
	341			
	342			
	343			
	352X			
	353			

**EQUIPMENT WHICH WILL FIT
AT THE EXISTING DPW SITE
(DEDHAM AVE)**

Town of Needham DPW Central Ave Storage Facility

Vehicle & Equipment Program Verification

- Develop equipment storage scenarios based on the season

Winter Season:				
Central Avenue			Dedham Avenue	
Garage		Canopy	Garage	Canopy
Year Round	Summer Equipment	Summer Equipment	Winter Equipment	Winter Equipment
150A	131	68	106	006A
156	134	91	107	007A
157	183	93	108	009A
158	184	108A	111	010A
159	186	309	112	47
160	202	321	113	207
161	233	322	116	208
163	250	328	117	807A
164	251	330	206	
165	253	332	806	
167	257	337	A007	
168	258	356	A008	
169	262	893	A116	
170	263	A001		
171	306	A002		
174	323	A003		
190	325	A009		
193	333	A010		
169	334	A011		
167	335	A101		
198	336	A105		
216	338	A106		
218	339			
	340			
	341			
	342			
	343			
	352X			
	353			

**EQUIPMENT TO BE STORED AT
CENTRAL AVE STORAGE
FACILITY (WINTER SEASON)**

Town of Needham DPW Central Ave Storage Facility

Vehicle & Equipment Program Verification

- Develop equipment storage scenarios based on the season

Summer Season:				
Central Avenue			Dedham Avenue	
Garage		Canopy	Garage	Canopy
Year Round	Winter Equipment	Winter Equipment	Summer Equipment	Summer Equipment
150A	106	006A	131	68
156	107	007A	134	91
157	108	009A	183	93
158	111	010A	184	108A
159	112	47	186	309
160	113	207	202	321
161	116	208	233	322
163	117	807A	250	328
164	206		251	330
165	806		253	332
167	A007		257	337
168	A008		258	356
169	A116		262	893
170			263	A001
171			306	A002
174			323	A003
190			325	A009
193			333	A010
169			334	A011
167			335	A101
198			336	A105
216			338	A106
218			339	
			340	
			341	
			342	
			343	
			352X	
			353	

**EQUIPMENT WHICH WILL FIT
AT THE EXISTING DPW SITE
(DEDHAM AVE)**

Town of Needham DPW Central Ave Storage Facility

Vehicle & Equipment Program Verification

- Develop equipment storage scenarios based on the season

**EQUIPMENT TO BE STORED AT
CENTRAL AVE STORAGE
FACILITY (SUMMER SEASON)**

Central Avenue			Dedham Avenue	
Garage		Canopy	Garage	Canopy
Year Round	Winter Equipment	Winter Equipment	Summer equipment	Summer Equipment
150A	106	006A	131	68
156	107	007A	134	91
157	108	009A	183	93
158	111	010A	184	108A
159	112	47	186	309
160	113	207	202	321
161	116	208	233	322
163	117	807A	250	328
164	206		251	330
165	806		253	332
167	A007		257	337
168	A008		258	356
169	A116		262	893
170			263	A001
171			306	A002
174			323	A003
190			325	A009
193			333	A010
169			334	A011
167			335	A101
198			336	A105
216			338	A106
218			339	
			340	
			341	
			342	
			343	
			352X	
			353	

Town of Needham DPW Central Ave Storage Facility

Vehicle & Equipment Program Verification

- Develop equipment storage scenarios based on the season

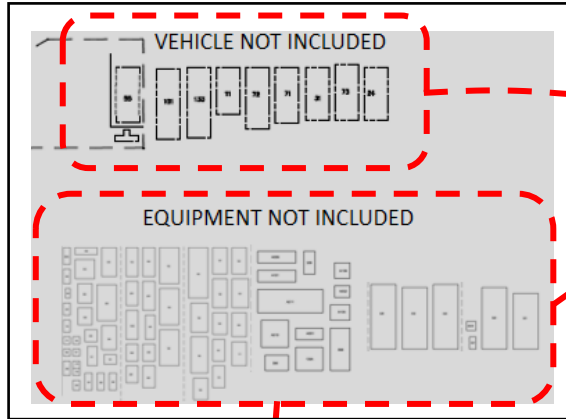


**Winter –
Control
Scenario**

Winter Season:					Summer Season:				
Central Avenue			Dedham Avenue		Central Avenue			Dedham Avenue	
Garage		Canopy	Garage	Canopy	Garage		Canopy	Garage	Canopy
Year Round	Summer Equipment	Summer Equipment	Winter Equipment	Winter Equipment	Year Round	Winter Equipment	Winter Equipment	Summer Equipment	Summer Equipment
150A	131	68	106	006A	150A	106	006A	131	68
156	134	91	107	007A	156	107	007A	134	91
157	183	93	108	009A	157	108	009A	183	93
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164	251	330	206		164	206		251	330
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168	258	356	A008		168	A008		258	356
169	262	893	A116		169	A116		262	893
170	263	A001			170			263	A001
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193	333	A010			193			333	A010
169	334	A011			169			334	A011
167	335	A101			167			335	A101
198	336	A105			198			336	A105
216	338	A106			216			338	A106
218	339				218			339	
	340							340	
	341							341	
	342							342	
	343							343	
	352X							352X	
	353							353	

Town of Needham
DPW Central Ave Storage Facility

Vehicle & Equipment Storage Concept Development



Reduced Scale Images of Equipment

CENTRAL AVE STORAGE Facility

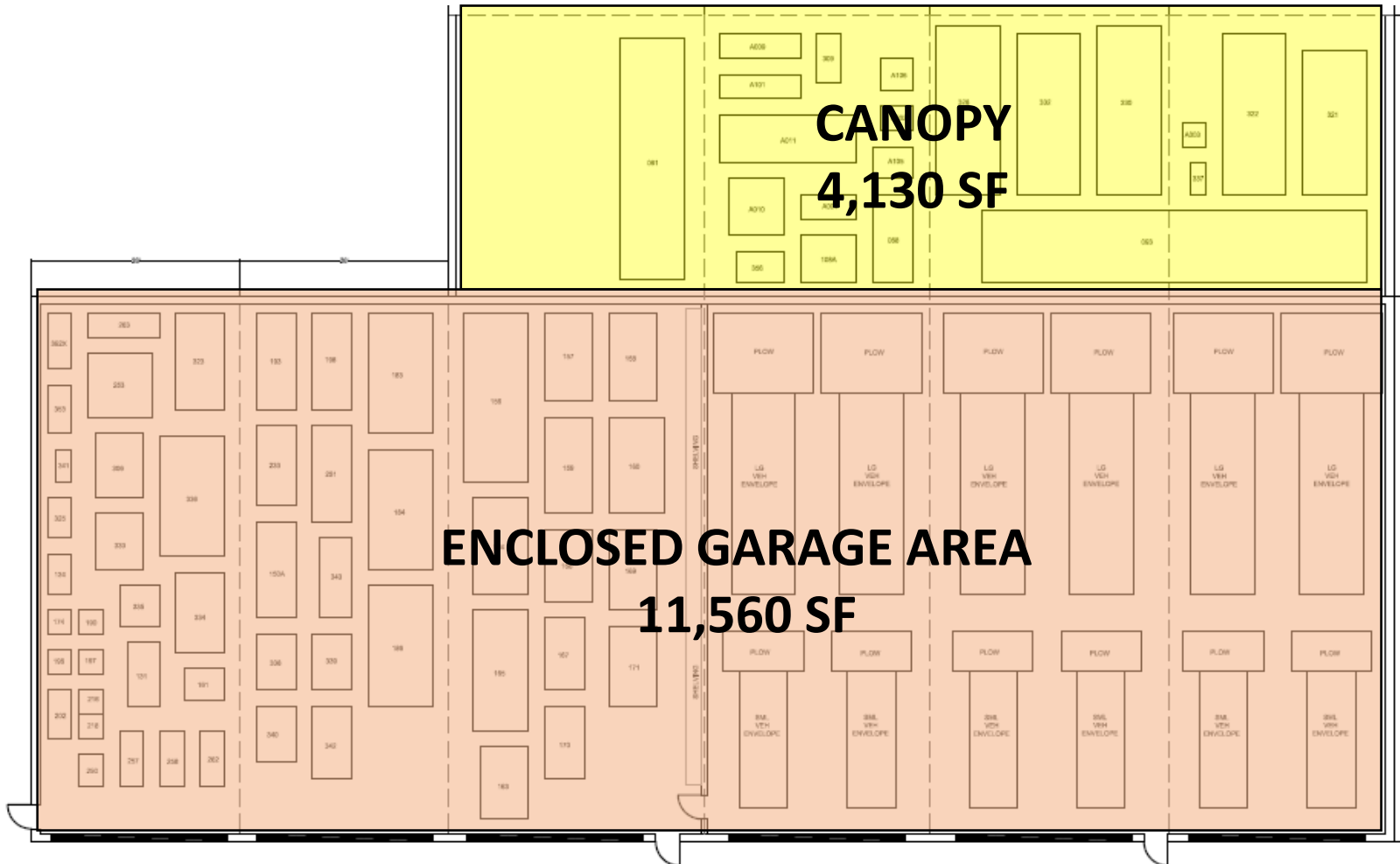
CANOPY

ENCLOSED MINIMALLY HEATED STORAGE

Town of Needham
DPW Central Ave Storage Facility

Vehicle & Equipment Storage Concept Development

CENTRAL AVE STORAGE FACILITY



Town of Needham
DPW Central Ave Storage Facility

Why Store the DPW Vehicles & Equipment
Indoors in a Minimally Heated Garage?

Town of Needham
DPW Central Ave Storage Facility

Why put the vehicles and equipment indoors.....

1. **Employee Safety**
2. Public Safety
3. Protection of Equipment
4. Stormwater Pollution Control
5. Cost Effective Operations
6. Efficient Operations



Employee safety is compromised when trying to clear off large equipment in inclement weather conditions as shown above

Town of Needham DPW Central Ave Storage Facility

Why put the vehicles and equipment indoors.....

1. Employee Safety
2. **Public Safety**
3. Protection of Equipment
4. Stormwater Pollution Control
5. Cost Effective Operations
6. Efficient Operations



Vehicles which are covered by snow or ice may take longer to respond to the needs of the community which could result in unsafe conditions for the public



Town of Needham DPW Central Ave Storage Facility

Why put the vehicles and equipment indoors.....

1. Employee Safety
2. Public Safety
- 3. Protection of Equipment**
4. Stormwater Pollution Control
5. Cost Effective Operations
6. Efficient Operations



Outdoor storage contributes to accelerated
equipment deterioration

Town of Needham
DPW Central Ave Storage Facility

Why put the vehicles and equipment indoors.....

1. Employee Safety
2. Public Safety
3. Protection of Equipment
- 4. Stormwater Pollution Control**
5. Cost Effective Operations
6. Efficient Operations



Vehicles stored outdoors on the existing site
have inadequate environmental control
measures

Town of Needham DPW Central Ave Storage Facility

Why put the vehicles and equipment indoors.....

1. Employee Safety
2. Public Safety
3. Protection of Equipment
- 4. Stormwater Pollution Control**
5. Cost Effective Operations
6. Efficient Operations



Any drips or spills from vehicles stored inside will be collected in a closed floor drain system preventing them from reaching the environment

Town of Needham
DPW Central Ave Storage Facility

Why put the vehicles and equipment indoors.....

1. Employee Safety
2. Public Safety
3. Protection of Equipment
4. Stormwater Pollution Control
- 5. Cost Effective Operations**
- 6. Efficient Operations**

Cost to Construct Storage Garage

- Construction
- Maintenance
- Operation

VERSUS

Cost Associated with Exterior Storage

- Increased Vehicle Maintenance
- Decrease in Vehicle Life Expectancy
- Non-Productive Labor
- Operational impacts
- Employee Safety & Environmental

Town of Needham DPW Central Ave Storage Facility

Why put the vehicles and equipment indoors.....

Case Study for increased vehicle life expectancy associated with storage of equipment indoors

- A Community purchased three large dump trucks
- They only had room to store one indoors
- Remaining two vehicles were stored outdoors
- Two vehicles stored outdoors were removed from service early due to equipment deterioration. Equipment conditions were so poor that they were sold as scrap.
- The vehicles which was stored indoors **remained in service for three more years** and was in suitable condition when it reached its service life that it was able to be sold at auction



Only room to store one (1) new dump truck indoors



Two (2) vehicles stored outdoors due to limited availability of covered storage

Town of Needham
DPW Central Ave Storage Facility

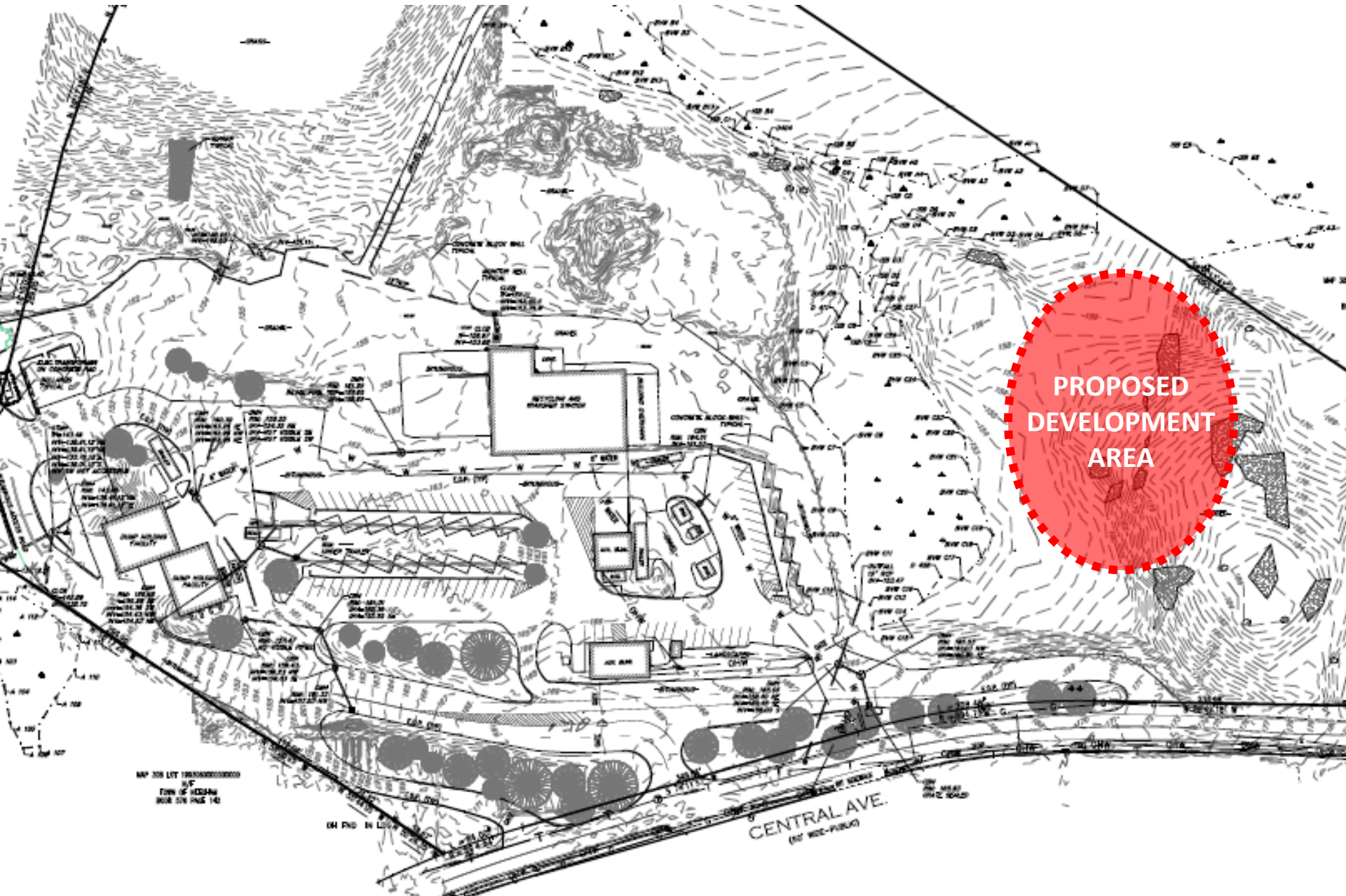
Central Avenue Storage Facility
Concept Development

Town of Needham
DPW Central Ave Storage Facility

Vehicle & Equipment Storage Concept Development

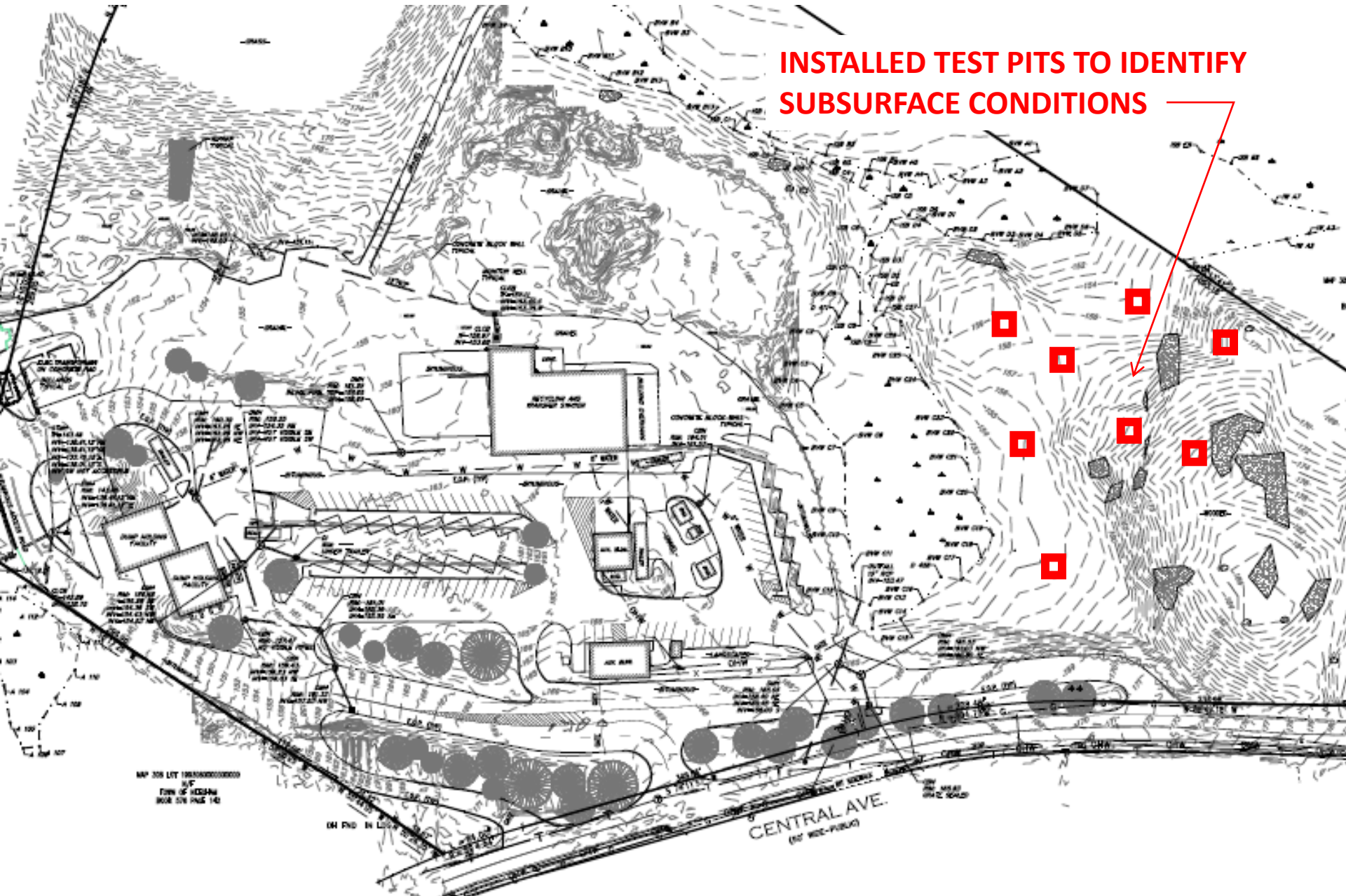


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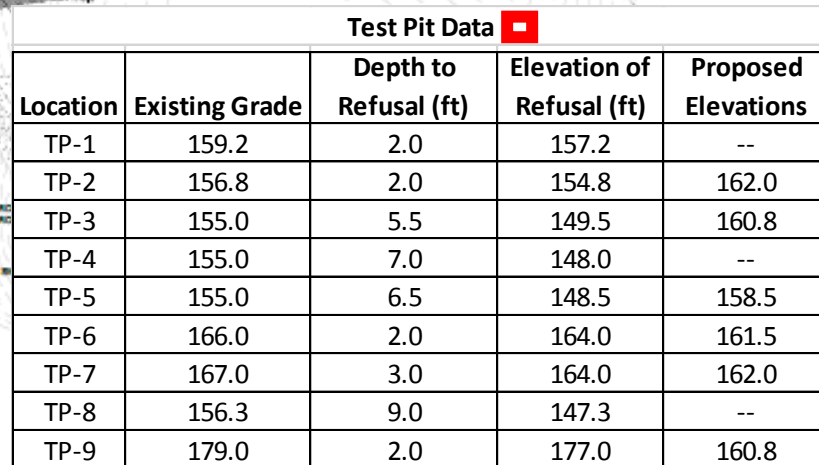


Town of Needham DPW Central Ave Storage Facility

**INSTALLED TEST PITS TO IDENTIFY
SUBSURFACE CONDITIONS**

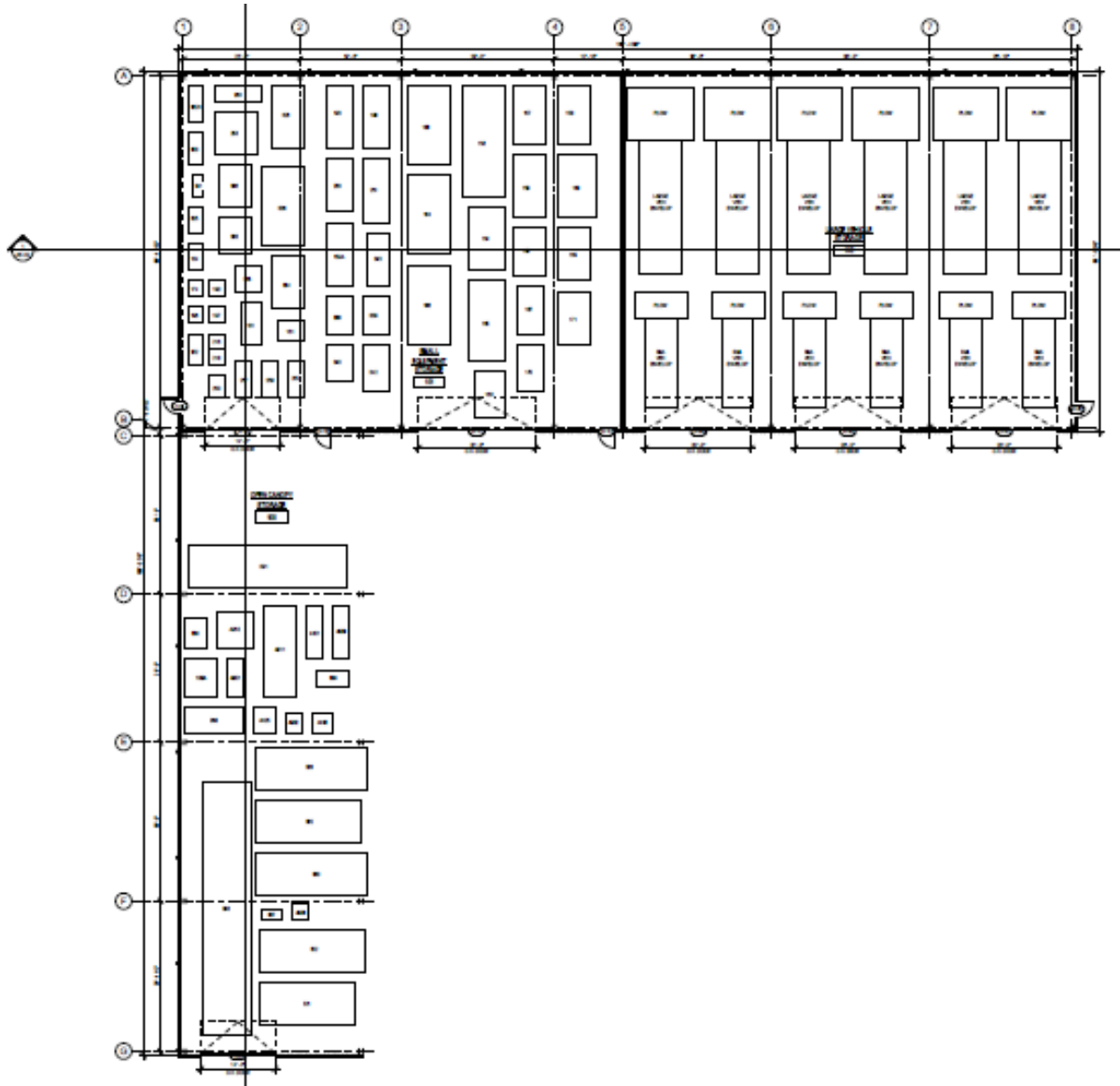


Preferred Site Plan



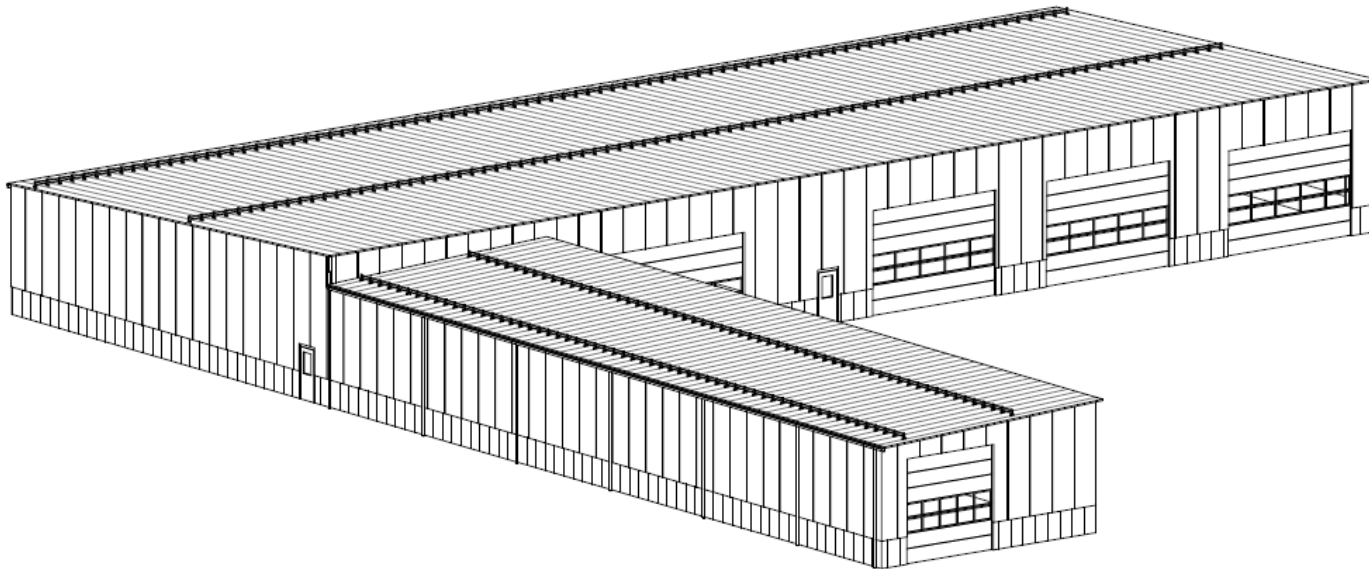
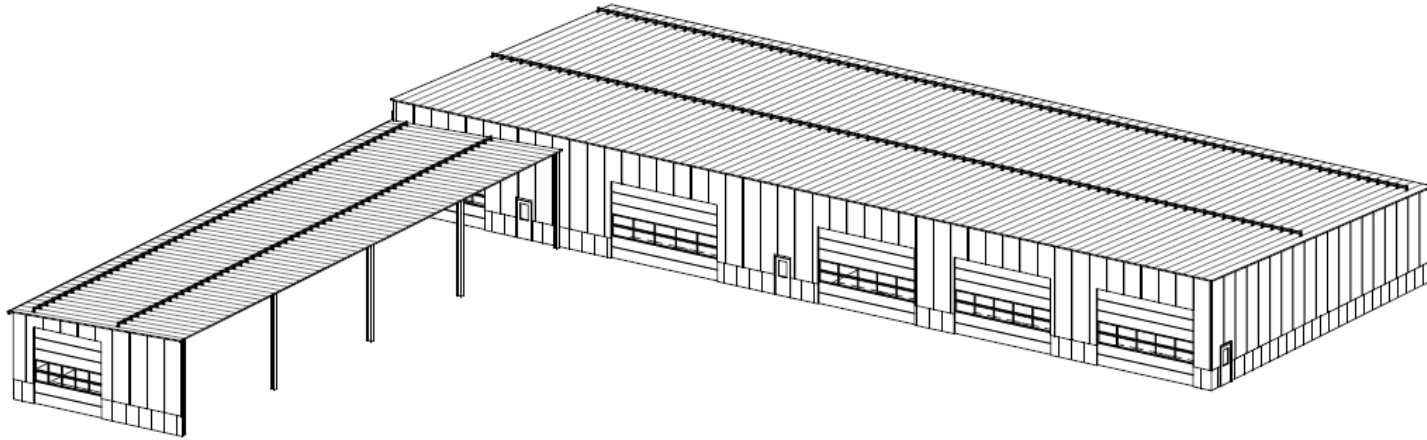
Town of Needham DPW Central Ave Storage Facility

Preferred Building – Floor Plan



Town of Needham
DPW Central Ave Storage Facility

Preferred Building – Massing Views



Town of Needham
DPW Central Ave Storage Facility

Schedule

Town of Needham
DPW Central Ave Storage Facility

Schedule

- Assuming approval at May 2018 Town Meeting

[illegible]

Police/Fire Move-out for Construction of New Facility

Use of Central Ave Storage Facility for Fire Department Equipment Storage During Construction of the New Police / Fire Facility

Town of Needham
DPW Central Ave Storage Facility

Questions